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K.7
4/16/99

ENVIRON

April 16, 1999

Mr. Michael McAteer
USEPA, HSRW-6J
77 West Jackson Blvd.
Chicago, IL 60604-3590

Re: Background Surface and Subsurface Water Monitoring Report
Enviro-Chem Site
Zionsville, Indiana

Dear Mr. McAteer:

This letter report presents the results of the background surface and subsurface water monitoring at the Enviro-Chem Site in Zionsville, Indiana between August 1998 and December 1998. The purpose of the background sampling is to determine the quality of the surface and subsurface water upgradient of the site.

Revised Exhibit A to the Consent Decree (Revised Exhibit A) requires the collection of 12 subsurface water samples from the background wells (T-5 and S-1) and 12 surface water samples from the upstream locations at the Unnamed Ditch (SW-1 and NSL-1) over a period of at least 12 months. According to the Quality Assurance Project Plan, Volume II, Field Sampling Plan, Addendum No.1, Background Sampling of Unnamed Ditch (Addendum N0.1 to the FSP), the surface water samples are to be collected during at least 6 storm events.

In the event that the upgradient surface/subsurface water samples contain concentrations for any parameter higher than the Acceptable Surface/Subsurface Water Concentrations set forth in Table 3.1 of the Revised Exhibit A, then these background concentrations will be used to derive the Acceptable Surface/Subsurface Water Concentrations.

A. Subsurface Water Sampling

To date, five of the 12 monthly background subsurface water samples have been collected from the upgradient till monitoring well T-5 and the upgradient sand/gravel monitoring well S-1 (Figure 1). This includes the samples collected from well T-5 and

well S-1 during the initial sampling of the compliance monitoring wells during the fourth quarter of 1998. Samples were collected as described in Section 6.3 of the Revised Remedial Action Field Sampling Plan (FSP), Revision 4 dated April 28, 1998 with the following alterations.

In accordance with the FSP the monitoring wells were purged a minimum of three well volumes of water or until the wells went dry, prior to sampling. In the case of the T-5 well, it always went dry. The water in T-5 was evacuated using a dedicated disposable bailer and a dedicated, decontaminated Teflon bailer was used to collect the sample. Due to the poor recovery of the T-5 well, the sample was collected over a period of 3 to 4 days. As soon as possible, on the day of purging, the volatile organic compounds (VOC) and Chromium VI samples were collected in order to prevent the volatilization and the degradation of these samples.

The water in the sand/gravel well S-1 was purged and sampled using a peristaltic pump and dedicated polyethylene tubing. The FSP specified that the wells be purged and sampled using a dedicated Teflon or stainless steel bailer. However, a peristaltic pump with the tubing intake placed at the bottom of the screened interval was used in order to sample the ground water at the bottom of the well. During the September sampling event, the peristaltic pump failed and, as a result, the S-1 well was purged and sampled from the top of the screened interval using a dedicated, decontaminated Teflon bailer. Both sampling methods are valid.

The metals and polychlorinated biphenyls (PCB) samples were filtered using a 0.45-micron filter in accordance with the Section 6.3 of the FSP. All of the cyanide samples with the exception of the samples from the December sampling event and the November sample from the S-1 well were mistakenly filtered. ENVIRON believes that the filtration of the cyanide samples did not effect the cyanide concentrations.

Field measurements of pH, temperature, specific conductivity, and dissolved oxygen were collected at various times during the purging procedure. Field indicator parameters and other information recorded during well purging and sampling are provided in Appendix A.

B. Surface Water Sampling

Two of the six proposed rounds of surface water samples have been collected from the upstream location SW-1 located in the Unnamed Ditch (Figure 1). This includes the sample collected from the SW-1 location during the initial sampling of the compliance-monitoring network during the fourth quarter of 1998. Both surface water samples were collected within 24 hours of a storm event as specified in Addendum No.1, to the FSP. Samples were not collected from the NSL-1 location since water was not flowing from the North Side Landfill discharge to the Unnamed Ditch during the sampling events.

The metals, cyanide and PCB surface water samples were mistakenly filtered during the November and December sampling events. The FSP only specifies that the subsurface samples be filtered.

A stream flow measurement was collected from the SW-1 location during the December sampling event. Field measurements of pH, temperature, specific conductivity, and dissolved oxygen were collected from the SW-1 location during the sample collection. Field indicator parameters, the December stream flow measurement, and the rain accumulation measurement recorded during the storm proceeding the surface water sampling are provided in Appendix A.

C. Sample Analysis and Results

Following the ground water sample collection, the samples were placed in a cooler with ice. At the end of each day, the sample coolers were shipped directly to the laboratory. Appropriate chain-of-custody protocols were followed throughout sample handling. CompuChem of Cary, North Carolina provided the analytical services for the November and December sampling events. Core Laboratories of Valparaiso, Indiana provided the analytical services for the August, September and October sampling events.

Surface and subsurface water samples were analyzed for the parameters listed in Table 3-1 of Revised Exhibit A in accordance with the analytical methods summarized in Table 7-1 of the FSP. Analytical results for the samples collected from monitoring well T-5, S-1 and the surface water location SW-1 are summarized in Table 1. Appendix B contains the full analytical results for all the background samples as well as the quality assurance and quality control samples collected during the background sampling.

D. Quality Assurance and Quality Control Samples

To monitor the effectiveness of decontamination procedures, ENVIRON collected at least one field blank per sampling event by pouring deionized water through a decontaminated Teflon bailer into a sample container or by pumping deionized water through the peristaltic pump and tubing into a sample container. For the metals, PCB, and some of the cyanide samples, the field blank water was also passed through a 0.45-micron filter. The laboratory supplied trip blanks to monitor possible contamination from sample handling, transport, and storage. The trip blanks accompanied the samples and were analyzed for the VOCs listed in Table 3-1 of Revised Exhibit A.

Methylene chloride, a common laboratory contaminant, was detected at low concentrations in three field and trip blanks collected during the November and December sampling events and slightly above the Acceptable Stream Concentrations in the field blank collected during the September sampling event. The concentrations of methylene chloride in the field and trip blanks are similar to the methylene chloride concentrations detected in the September, November, and December background samples. ENVIRON believes that the methylene chloride detected in these field blanks, trip blanks, and background samples originated from the analytical laboratory. None of the other analytes analyzed by the laboratory have been affected.

A low concentration of cyanide was also detected in the September field blank sample. A corresponding low cyanide concentration was detected in the September background sample from T-5. The notes from the field book indicated that both samples were collected at approximately the same time on a day that was very windy and dusty. In addition to methylene chloride, tetrachloroethene, toluene and trichloroethene were also detected in one of the November trip blanks. All three compounds have appeared in at least one of the laboratory method blanks.

To evaluate the reproducibility of results, ENVIRON collected a duplicate sample from monitoring well S-1 during each round of sampling. The duplicate ground water sample was collected by pouring the ground water from the bailer into two sets of sample containers or if the pump was used to sample, the water was pumped into two sets of containers. The analytical results for the duplicate samples are included in Table 1. The results for each sample in the duplicate pairs were similar, indicating good reproducibility of the sampling and analytical methods.

If you have any questions about this letter or any other aspects of the project, please do not hesitate to contact us.

Sincerely,

ENVIRON International Corporation

Scott C. Hayter /RB

Scott C. Hayter
Associate

Ronald E. Hutchens, P.E.
Principal

cc: Mr. Roy Ball – ENVIRON International Corp.
Mr. Norman Bernstein – Bernstein & Associates
Mr. Mark Dowiak – Radian
Mr. Myron Waters – IDEM
Mr. Tim Harrison – CH2M Hill

TABLES

TABLE 1
Summary of Analytical Results for Water Samples
Enviro-Chem Background Sampling
August - December 1998

Parameter Detected		Well T-5					Well S-1					Surface Water SW-1	
		Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Nov-98	Dec-98
Volatile Organics													
Methylene Chloride	[15.7]	--	190	--	--	--	-- / --	130 , 310	-- / --	-- / --	-- / --	--	--
Semi-Volatile Organics		--	--	--	--	--	-- / --	-- / --	-- / --	-- / --	-- / --	--	--
Polychlorinated biphyenyls	[0.00079]	--	--	--	--	--	-- / --	-- / --	-- / --	-- / --	-- / --	--	--
Inorganics													
Zinc	[47]	--	--	--	--	89.4	-- / --	-- / --	-- / --	-- / --	-- / --	--	--

Notes:

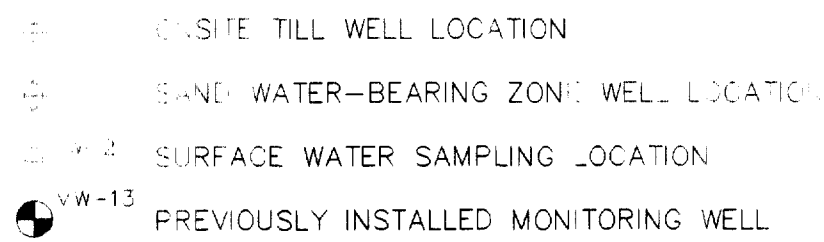
All concentrations are in ug/L.

[15.7] = Acceptable Stream Concentrations from Revised Exhibit A, Table 3-1.

-- = Not detected above Acceptable Stream Concentration.

130 / 310 = Duplicate water sample analyzed.

FIGURES



1 FIGURE

BACKGROUND SURFACE AND SUBSURFACE WATER SAMPLING LOCATIONS

ENVIRO-CHEM SITE

ZIONSVILLE, INDIANA

ENVIRON

650 DUNDEE ROAD, SUITE 150, NORTHBROOK, IL 60062

PRINCETON,NJ • ARLINGTON,VA • EMERYVILLE,CA • IRVINE,CA • NOVATO,CA
LOVELAND,OH • HOUSTON,TX • LONDON,UK • EDINBURGH,UK

12/21/98	1"=30'	216585AF05	4/16/99
DATE	SCALE	CADD FILE	PLOT DATE

S. HAYTER	H. ZUCZEK	R.HUTCHINS
DESIGNED BY	DRAFTED BY	APPROVED BY

APPENDIX A

Field Measurements/Purge Data

TABLE A-1
Enviro-Chem Site Background Well No T-5
Field Measurements and Purge Data
August - December 1998

Field Parameters and Data	T-5	T-5	T-5	T-5	T-5	
Date	8/31/98	9/23/98	10/23/98	11/10/98-11/12/98	12/7/98	
Weather Conditions	Sunny 85 F	Sunny 70 F	Sunny 70 F	Rain 65 F	Overcast 40 F	
Before Purging						
PID Reading (ppm)	NM	NM	NM	<1	NM	
pH	6.96	NM	NM	NM	7.21	
Dissolved Oxygen (ppm)	0.37	NM	NM	NM	5.81	
Temperature (C)	18.9	NM	NM	NM	13.1	
Specific Conductivity (uS/cm)	0.51	NM	NM	NM	0.612	
Total Depth of Well (Feet below ground surface)	19.2	19.2	19.2	19.2	19.2	
Depth to water (Ft from top of inner casing to water)	9.2	10.2	NM	11.09	10.02	
Estimated water volume in well (gallons)	1.6	1.5	NM	1.32	1.5	
Three Well Volumes(gallons)	4.8	4.5	NM	3.97	4.5	
After Purging						
Purge Start	1131	930	NM	NM	1035	
Purge End	1143	940	NM	NM	1100	
Purge Method	BT	BT	BT	NBT	BT	
Approximate Purge Rate (gpm)	0.2	0.2	NM	NM	0.1	
Total Volume Purged (gal.)	2.2**	2.3**	2.5**	3**	2**	
pH	7.4	NM	NM	NM	7.51	
Dissolved Oxygen (ppm)	0.65	NM	NM	NM	5.82	
Temperature (C)	18..4	NM	NM	NM	13.1	
Specific Conductivity (uS/cm)	0.499	NM	NM	NM	0.617	
Sampling						
Sampling Date(s)	8/31/98, 9/1/98 &	9/23/98 and	10/23/98 and	11/9, 11/11 and	12/7/98	
Sampling End Time	9/2/98	9/25/98	10/26/98	11/12/98	1500	
Sampling Method	BT	BT	BT	BT	BT	

Notes:

** = Well purged dry NM = no measurement *depth from top of steel casing

BT = Bailer (Teflon) PP = Peristaltic Pump PID = Photoionization Detector

TABLE A-2
Enviro-Chem Site Background Well No S-1
Field Measurements and Purge Data
August - December 1998

Field Parameters and Data	S-1	S-1	S-1	S-1	S-1	
Date	9/1/98	9/25/98	10/26/98	11/12/98	12/7/98	
Weather Conditions	Sunny 85 F	Overcast 75 F	Sunny 50 - 70 F	Sunny 50 F	Overcast 40 F	
Before Purging						
PID Reading (ppm)	NM	NM	NM	<1	NM	
pH	6.81	9.82	7.19	7.77	7.67	
Dissolved Oxygen (ppm)	0.3	3.16	0.69	0.15	0.69	
Temperature (C)	15.7	17.9	17.2	13.1	12.2	
Specific Conductivity (uS/cm)	0.576	0.865	0.76	0.63	0.583	
Total Depth of Well (Feet below ground surface)	41.4	41.4	41.4	41.4	41.4	
Depth to water (Ft from top of inner casing to water)	10.8	11.25	11.25	11.29	11.25	
Estimated water volume in well (gallons)	5	4.8	4.8	4.91	4.8	
Three Well Volumes(gallons)	15	14.6	14.6	14.72	14.4	
After Purging						
Purge Start	851	NM	NM	1601	1145	
Purge End	905	NM	NM	1620	1256	
Purge Method	PP	BT	PP	PP	PP	
Approximate Purge Rate (gpm)	1.1	NM	NM	0.08	0.2	
Total Volume Purged (gal.)	15	15	15	15	15.3	
pH	6.98	7.25	7.29	7.63	7.61	
Dissolved Oxygen (ppm)	0.31	2.27	0.98	0.4	1.1	
Temperature (C)	13.5	14.2	14.4	13.2	12.6	
Specific Conductivity (uS/cm)	0.575	0.692	0.734	0.63	0.595	
Sampling						
Sampling Date(s)	9/1/98	9/25/98	10/26/98	11/12/98	12/7/98	
Sampling End Time	1000	1630	1500	1630	1335	
Sampling Method	PP	BT	PP	PP	PP	

Notes:

** = Well purged dry NM = no measurement *depth from top of steel casing

BT = Bailer (Teflon) PP = Peristaltic Pump PID = Photoionization Detector

TABLE A-3

Enviro-Chem Background Surface Sampling at SW-1 and NSL-1

Field Measurements and Flow Data

August - December 1998

Field Parameters and Data	SW-1	SW-1				
Date	11/11/98	12/7/98				
Weather Conditions	Windy 55 F	Overcast 40 F				
Sampling Time	1410	1400				
pH	8.23	7.73				
Dissolved Oxygen (ppm)	9.76	8.08				
Temperature (C)	8.6	9.7				
Specific Conductivity (uS/cm)	0.67	0.758				
Unnamed Ditch Flow Measurements						
Flow Velocity (ft/sec)*	NM	0.3				
Cross Sectional Area	NM					
Calculated Flow Volume (Gal/min)	NM					
Storm Event - Rain Accumulation						
Accumulation (inches)**	0.47	0.33				

Notes:

NM = no measurement

* measured with a Global Stream Velocity Meter for 30 seconds.

** measurement recorded at Fisher weater station in Hamilton County.

APPENDIX B

Analytical Results for Background Samples

TABLE B-1
Analytical Results for Ground Water Samples
Background Well No. T-5 (Till Well)

LOCATION		T-5	T-5	T-5	T-5	T-5
ENVIRON SAMPLE ID		T5-980831	T5-980923	T5-981023	ECTGW5-01	T5-981207
COLLECTION METHOD		BAILER	BAILER	BAILER	BAILER	BAILER
COLLECTION DATE		8/31/98	9/23/98	10/23/98	11/9/98 TO 11/12/98	12/7/98
COMMENTS						
Volatile Organic Compounds						
Vinyl Chloride	*[525]*	5 U	5 U	10 U	0.5 U	0.5 U
1,1-Dichloroethene	*[1.85]*	1 U	1 U	5 U	0.5 U	0.5 U
Methylene Chloride	*[15.7]*	5 U	190	5 U	2 B	0.6 B
1,2-Dichloroethene (TOTAL)	*[1.85]*	1 U	1 U	5 U	0.5 U	0.5 U
Ethylbenzene	*[3280]*	1 U	1 U	5 U	0.5 U	0.5 U
Tetrachloroethene	*[8.85]*	1 U	1 U	5 U	0.5 U	0.5 U
Toluene	*[3400]*	1 U	1 U	5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	*[5280]*	1 U	1 U	5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	*[41.8]*	1 U	1 U	5 U	0.5 U	0.5 U
Trichloroethene	*[80.7]*	1 U	1 U	5 U	0.5 U	0.5 U
Semi-Volatile Organic Compounds						
Bis (2-ethylhexyl) phthalate	*[50000]*	2.8 U	3.55 U	2.5 U	4 J	10 U
Di-n-butyl phthalate	*[154000]*	11.1 U	14.2 U	10 U	10 U	10 U
1,2-Dichlorobenzene	*[763]*	11.1 U	14.2 U	10 U	10 U	10 U
Diethyl Phthalate	*[52100]*	11.1 U	14.2 U	10 U	10 U	10 U
Naphthalene	*[620]*	11.1 U	14.2 U	10 U	10 U	10 U
Phenol	*[570]*	11.1 U	14.2 U	10 U	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic): or value is <CRDL but > IDL (inorganic)
J - Estimated value. BRL - Below Reporting Limit

TABLE B-1 (cont.)
Analytical Results for Ground Water Samples
Background Well No. T-5 (Till Well)

LOCATION		T-5	T-5	T-5	T-5	T-5
ENVIRON SAMPLE ID		T5-980831	T5-980923	T5-981023	ECTGW5-01	T5-981207
COLLECTION METHOD		BAILER	BAILER	BAILER	BAILER	BAILER
COLLECTION DATE		8/31/98	9/23/98	10/23/98	11/9/98 TO 11/12/98	12/7/98
COMMENTS						
Polychlorinated biphenyls						
Aroclor 1016	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Aroclor 1221	*[.00079]*	1 U	0.8 U	1 U	2 U	2 U
Aroclor 1232	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Aroclor 1242	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Aroclor 1248	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Aroclor 1254	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Aroclor 1260	*[.00079]*	1 U	0.8 U	1 U	1 U	1 U
Inorganics						
Arsenic	*[0.0175]*	0.02 U	0.02 U	0.02 U	2.3 B	1.7 U
Hexavalent Chromium	*[11]*	0.01 U	0.01 U	0.01 U	10 BRL	10 BRL
Lead	*[10]*	0.05 U	0.05 U	0.05 U	0.7 U	0.7 U
Nickel	*[100]*	0.01 U	0.01 U	0.01	1.4 B	2.4 B
Zinc	*[47]*	0.01	0.13 U	0.01 U	1.5 U	89.4
Cyanide (Total)	*[5.2]*	0.005 U	0.007	0.005 U	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic): or value is <CRDL but >IDL (inorganic)
J - Estimated value. NA - not analyzed BRL - Below Reporting Limit

TABLE B-2
Analytical Results for Ground Water Samples
Background Well No. S-1 (Sand/Gravel Well)

LOCATION		S-1	S-1	S-1	S-1	S-1	S-1
ENVIRON SAMPLE ID		S1-980901	S1-980901 DUP	S1-980925	S1-980925 DUP	S1-981026	S1-981026DUP
COLLECTION METHOD		PUMP	PUMP	BAILER	BAILER	PUMP	PUMP
COLLECTION DATE		9/1/98	9/1/98	9/25/98	9/25/98	10/26/98	10/26/98
COMMENTS			DUPLICATE		DUPLICATE		DUPLICATE
Volatile Organic Compounds							
Vinyl Chloride	*[525]*	5 U	5 U	5 U	5 U	10 U	10 U
1,1-Dichloroethene	*[1.85]*	1 U	1 U	1 U	1 U	5 U	5 U
Methylene Chloride	*[15.7]*	5 U	5 U	130	310	5 U	5 U
1,2-Dichloroethene (TOTAL)	*[1.85]*	1 U	1 U	1 U	1 U	5 U	5 U
Ethylbenzene	*[3280]*	1 U	1 U	1 U	1 U	5 U	5 U
Tetrachloroethene	*[8.85]*	1 U	1 U	1 U	1 U	5 U	5 U
Toluene	*[3400]*	1 U	3	1 U	1 U	5 U	5 U
1,1,1-Trichloroethane	*[5280]*	1 U	1 U	1 U	1 U	5 U	5 U
1,1,2-Trichloroethane	*[41.8]*	1 U	1 U	1 U	1 U	5 U	5 U
Trichloroethene	*[80.7]*	1 U	1 U	1 U	1 U	5 U	5 U
Semi-Volatile Organic Compounds							
Bis (2-ethylhexyl) phthalate	*[50000]*	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Di-n-butyl phthalate	*[154000]*	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	*[763]*	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl Phthalate	*[52100]*	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	*[620]*	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	*[570]*	10 U	10 U	10 U	10 U	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected
B - Analyte was also detected in the blank (organic); or value is <CRDL and >IDL (inorganic)
J - Estimated value. BRL - Below Reporting Limit

TABLE B-2 (cont.)
Analytical Results for Ground Water Samples
Background Well No. S-1 (Sand/Gravel Well)

LOCATION		S-1	S-1	S-1	S-1	S-1	S-1
ENVIRON SAMPLE ID		S1-980901	S1-980901 DUP	S1-980925	S1-980925 DUP	S1-981026	S1-981026DUP
COLLECTION METHOD		PUMP	PUMP	BAILER	BAILER	PUMP	PUMP
COLLECTION DATE		9/1/98	9/1/98	9/25/98	9/25/98	10/26/98	10/26/98
COMMENTS			DUPLICATE		DUPLICATE		DUPLICATE
Polychlorinated biphenyls							
Aroclor 1016	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1221	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1232	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1242	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1248	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1254	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1260	*[.00079]*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Inorganics							
Arsenic	*[0.0175]*	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexavalent Chromium	*[11]*	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead	*[10]*	0.05 U	0.05 U	0.05 U	0.05 U	0.052 U	0.05 U
Nickel	*[100]*	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Zinc	*[47]*	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cyanide (Total)	*[5.2]*	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic); or value is <CRDL and >IDL (inorganic)
J - Estimated value. NA - not analyzed BRL - Below Reporting Limit

TABLE B-2 (cont.)
Analytical Results for Ground Water Samples
Background Well No. S-1 (Sand/Gravel Well)

LOCATION		S-1	S-1	S-1	S-1
ENVIRON SAMPLE ID		ECSGW1-01	ECSGW1-01M	S1-981207	S1-981207DUP
COLLECTION METHOD		PUMP	PUMP	PUMP	PUMP
COLLECTION DATE		11/12/98	11/12/98	12/7/98	12/7/98
COMMENTS			DUPLICATE		DUPLICATE
Volatile Organic Compounds					
Vinyl Chloride	*[525]*	0.5 U	NS	0.5 U	0.5 U
1,1-Dichloroethene	*[1.85]*	0.5 U	NS	0.5 U	0.5 U
Methylene Chloride	*[15.7]*	2 B	NS	0.8 B	0.7 B
1,2-Dichloroethene (TOTAL)	*[1.85]*	0.5 U	NS	0.5 U	0.5 U
Ethylbenzene	*[3280]*	0.5 U	NS	0.5 U	0.5 U
Tetrachloroethene	*[8.85]*	0.5 U	NS	0.5 U	0.5 U
Toluene	*[3400]*	0.5 U	NS	0.5 U	0.5 U
1,1,1-Trichloroethane	*[5280]*	0.5 U	NS	0.5 U	0.5 U
1,1,2-Trichloroethane	*[41.8]*	0.5 U	NS	0.5 U	0.5 U
Trichloroethene	*[80.7]*	0.5 U	NS	0.5 U	0.5 U
Semi-Volatile Organic Compounds					
Bis (2-ethylhexyl) phthalate	*[50000]*	10 U	10 U	10 U	9 U
Di-n-butyl phthalate	*[154000]*	10 U	10 U	10 U	9 U
1,2-Dichlorobenzene	*[763]*	10 U	10 U	10 U	9 U
Diethyl Phthalate	*[52100]*	10 U	10 U	10 U	9 U
Naphthalene	*[620]*	10 U	10 U	10 U	9 U
Phenol	*[570]*	10 U	10 U	10 U	9 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected. NS - nort sampled
B - Analyte was also detected in the blank (organic); or value is <CRDL and >IDL (inorganic)
J - Estimated value. BRL - Below Reporting Limit

TABLE B-2 (cont.)
Analytical Results for Ground Water Samples
Background Well No. S-1 (Sand Layer Well)

LOCATION		S-1	S-1	S-1	S-1
ENVIRON SAMPLE ID		ECSGW1-01	ECSGW1-01M	S1-981207	S1-981207DUP
COLLECTION METHOD		PUMP	PUMP	PUMP	PUMP
COLLECTION DATE		11/12/98	11/12/98	12/7/98	12/7/98
COMMENTS			DUPLICATE		DUPLICATE
Polychlorinated biphenyls					
Aroclor 1016	*[.00079]*	1 U	1 U	1 U	0.96 U
Aroclor 1221	*[.00079]*	2 U	2 U	2 U	1.9 U
Aroclor 1232	*[.00079]*	1 U	1 U	1 U	0.96 U
Aroclor 1242	*[.00079]*	1 U	1 U	1 U	0.96 U
Aroclor 1248	*[.00079]*	1 U	1 U	1 U	0.96 U
Aroclor 1254	*[.00079]*	1 U	1 U	1 U	0.96 U
Aroclor 1260	*[.00079]*	1 U	1 U	1 U	0.96 U
Inorganics					
Arsenic	*[0.0175]*	1.7 U	1.7 B	2 B	1.9 B
Hexavalent Chromium	*[11]*	10 BRL	10 BRL	10 BRL	10 BRL
Lead	*[10]*	0.81 B	0.7 U	0.7 U	0.7 U
Nickel	*[100]*	0.7 U	0.7 U	0.74 B	1.2 B
Zinc	*[47]*	1.5 U	1.5 U	1.5 U	1.5 U
Cyanide (Total)	*[5.2]*	10 U	10 U	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic); or value is<CRDL but > IDL (inorganic)
J - Estimated value. BRL- Below Reporting Limit

TABLE B-3
Analytical Results for Surface Water Samples
Background Surface Water Sampling Points SW-1 and NSL-1

LOCATION		SW-1	SW-1
ENVIRON SAMPLE ID		ECSW101	SW1-981207
COLLECTION METHOD		SAMPLE BOTTLE	SAMPLE BOTTLE
COLLECTION DATE		11/11/98	12/7/98
COMMENTS			
Volatile Organic Compounds			
Vinyl Chloride	*[525]*	0.5 U	0.5 U
1,1-Dichloroethene	*[1.85]*	0.5 U	0.5 U
Methylene Chloride	*[15.7]*	1 B	0.6 B
1,2-Dichloroethene (TOTAL)	*[1.85]*	0.5 U	0.5 U
Ethylbenzene	*[3280]*	0.5 U	0.5 U
Tetrachloroethene	*[8.85]*	0.5 U	0.5 U
Toluene	*[3400]*	0.5 U	0.5 U
1,1,1-Trichloroethane	*[5280]*	0.5 U	0.5 U
1,1,2-Trichloroethane	*[41.8]*	0.5 U	0.5 U
Trichloroethene	*[80.7]*	0.5 U	0.5 U
Semi-Volatile Organic Compounds			
Bis (2-ethylhexyl) phthalate	*[50000]*	10 U	10 U
Di-n-butyl phthalate	*[154000]*	10 U	10 U
1,2-Dichlorobenzene	*[763]*	10 U	10 U
Diethyl Phthalate	*[52100]*	10 U	10 U
Naphthalene	*[620]*	10 U	10 U
Phenol	*[570]*	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Stream Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic); or value is <CRDL but >IDL (inorganic)
J - Estimated value. BRL - Below Reporting Limit

TABLE B-3 (cont.)
Analytical Results for Surface Water Samples
Background Surface Water Sampling Points SW-1 and NSL-1

LOCATION		SW-1	SW-1
ENVIRON SAMPLE ID		ECSW101	SW1-981207
COLLECTION METHOD		SAMPLE BOTTLE	SAMPLE BOTTLE
COLLECTION DATE		11/11/98	12/7/98
COMMENTS			
Polychlorinated biphenyls			
Aroclor 1016	*[.00079]*	1 U	0.96 U
Aroclor 1221	*[.00079]*	2 U	1.9 U
Aroclor 1232	*[.00079]*	1 U	0.96 U
Aroclor 1242	*[.00079]*	1 U	0.96 U
Aroclor 1248	*[.00079]*	1 U	0.96 U
Aroclor 1254	*[.00079]*	1 U	0.96 U
Aroclor 1260	*[.00079]*	1 U	0.96 U
Inorganics			
Arsenic	*[0.0175]*	1.7 U	1.9 B
Hexavalent Chromium	*[11]*	10 BRL	10 BRL
Lead	*[10]*	0.7 U	0.7 U
Nickel	*[100]*	15.9 U	27.9
Zinc	*[47]*	1.5 U	11.2 B
Cyanide (Total)	*[5.2]*	10 U	10 U

Notes: All concentrations are in ug/L.
Concentrations in bold exceed the Acceptable Subsurface Water Concentrations.
[2] - Acceptable Subsurface Water Concentrations.
U - Compound was not detected.
B - Analyte was also detected in the blank (organic); or value is <CRDL but >IDL (inorganic)
J - Estimated value. BRL - Below Reporting Limit